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5-6-99

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Crawler track link member

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German published specification (DE-AS) No 16 05 509 discloses a caterpillar or crawler track link member having a plate-shaped slide-on portion in the form of a travelling pad. A base plate which is connected to the travelling pad has a stamped-out tongue which, when the travelling pad is pushed on, ~~slides~~ into the crawler track link member over an abutment projection until - after the travelling pad moves into a condition of abutment - the travelling pad ~~drops in retaining~~ relationship on the crawler track link member behind a projection.

15 When the track-laying vehicle ~~is moving along~~, travelling pads of
 that kind are subjected to stresses due to high contact pressures,
 thrust loadings and high dynamic shock loadings. Particularly in the
 case of highly mobile vehicles, overloading frequently causes the base
 plate to ~~suffer from~~ ^{be subjected to} incipient cracks or fractures which generally start
 from the ^{bottom} of the incision of the tongue retaining portion. If the
 incipient cracks or fractures are not noticed sufficiently early or if
 20 travelling pads with base plates which have ~~suffered from~~ ^{been being subjected to} incipient
 cracking or fracturing are not removed ^{due to rubber wear} by virtue of the rubber wear,
 then the base plate ~~suffers from~~ ^{encounters a} complete rupture. Travelling pads with
 completely fractured base plates represent a potential danger ^{since} as they
 can fly off the track when the vehicle is ~~moving along~~ ^{travelling}.

25 Various endeavours have been undertaken to avoid or reduce the risk of incipient crack or fracture. For that purpose for example the notch ^{an} ~~shape~~ ^{spring} factor was ~~brought into effect~~ ^{introduced} by providing a larger radius in the incision region of the tongue, and fixing the stamping direction in the cutting operation to avoid stress peaks on the flexural tensile side. An increase in the thickness of the initial sheet metal was also 30 tried, ^{however, it} ~~it~~ was not possible for those measures to provide a definitive solution to the cracking problem.

35 The object of the present invention is ⁴⁴⁷so ^{intended} to design the slide-on portion ^{that} incipient cracks and ruptures on base plates of slide-on portions ^{AB2} for crawler tracks ~~do not occur~~.

The invention attains that object in accordance with the characterising features of claim 1. Advantageous developments of the invention are set forth in the appendant claims.

5 The ^{manipulate} way in which that object is attained provides that the securing tongue of the base plate is no longer cut out ^{to be} therein and pushed out, but rather the base plate is provided with an impression ^{for} portion in the region of the ^{therefrom} tongue which was earlier pushed out therefrom, ^{shaping or deformation} and which implements the function of the ^{deforming latching} tongue retaining portion.

10 The base plate is now no longer weakened by the incisions. There is no longer any notch ^{forming} factor which had considerably increased the ^{stress} loading on the component. There is no need for an increase in the thickness of the base plate, ^{which signifies} That means that the weight of the sheet metal component is also not increased. The slide-on portion can be

15 fitted and removed in a simple manner by the existing on-board tools. Tests which have been carried out have shown that no incipient cracks and ruptures ^{were encountered by} occurred on the base plates, over the useful life of the slide-on portion. The elimination of the incisions in the base plate affords a reduction in ^{also} ⁴⁵ manufacturing costs.

20 Embodiments of the invention are illustrated in the drawing in which:

Figures 1 and 2 are views in cross-section of travelling pads in a crawler track link member,

25 Figure 3 is a perspective view of a travelling pad in a crawler track link member,

Figure 4 is a view in section taken along line IV-IV in Figure 3,

Figure 5 is a view in cross-section of a further travelling pad in a crawler track link member,

Figure 6 is a view in section taken along line VI-VI in Figure 5,

30 Figure 7 shows a base plate of the travelling pad illustrated in Figure 5,

Figure 8 shows a portion of a crawler track with a travelling pad,

Figure 9 shows a sectional view of part of a travelling pad as shown in Figure 8,

Figure 11 is a view in cross-section taken along line XI-XI in Figure 10.

5 Referring to Figure 1, pushed into guide grooves 1 (which are not further shown) in a tubular body 2 is a travelling pad 3 with a base plate 4.

plate 4. ^{a67}
The base plate 4 is disposed in a retained or latched condition between two abutments 5, 6, ^{referring to the latching} ~~see the retaining region~~ 10. When the travelling pad 3 with the base plate 4 is pushed into the guide grooves 1 the base plate 4 slides over the abutment 6. ^{Upon that occurrence} ~~When that happens;~~ the base plate 4 is elastically deformed. When the travelling pad 3 is worn the base plate 4 is ^{adapted} ~~is to be~~ lifted over the abutment 6 ^{by a phantom} ~~by way of~~ an opening indicated in ~~broken~~ ^{represented by line} line at 7, by means of a tool 11 (not shown), and is to be levered out by way of a ^{further} ~~tool~~ (also not shown) which is to be inserted as indicated by the arrow 8. The base plate 4 is disposed in a main plane 9. ~~It is incision free, that is to say it is in the form of a tongueless~~ ^{tongueless} ~~base~~ base plate 4.

Referring to Figure 2, ⁱⁿ as a departure from Figure 1 a base plate 14 is provided with a ^{deformation or shaping} tongue 15 formed by non-cutting shaping. The main plane 9 and the tongue plane 16 form an angle 17. That results in frictional contact when the travelling pad 13 is pushed in or out of the tubular body 2, only between the ^{deformation} tongue 15 and the abutment 6. The ^{latching} shaping zones in the ^{retaining} region 10 which result in the formation of the tongue 15 are described with reference to Figure 7.

Referring to Looking at Figures 3 and 4, in the case of a travelling pad 23 - similarly to Figures 2 and 7 - a base plate 24 with a tongue 25 which is formed therefrom by non-cutting shaping ^{or deformation} is provided in the ^{latching} retaining region 10. The base plate 24 extends in terms of surface area in regard ^{with} to the major part thereof over the travelling pad 23. An elastomer layer 26 is disposed between a wearable steel body 27 which engages into the guide grooves 1 in a tubular body 22 ^{which is} shown in dash-dotted line. Similarly to the abutments 5, 6 shown in Figures 1 and 2, the base plate 24 is also disposed between abutments 28 and 29. An opening for lifting

the tongue 25 out of the tubular body 22 is identified by reference numeral 30.

As shown in Figures 5 to 7, a travelling pad 33 which is fixed in a tubular body 32 has a base plate 34 corresponding to ^{that of} Figures 2 and 4.

- 5 The base plate 34 has two shaped or deformation zones 36 in the retaining region 10. Those shaped zones 36 provide for the formation of a tongue 35 ^{deformation} corresponding to the angle 17 with respect to the main plane 9, ^{as shown in} see Figure 2. The base plate 34 is the carrier of the travelling pad 33 and at the same time it serves to ^{form} make a positively locking connection ^{with} to the tubular body 32 by engagement into the guide grooves 31 of the tubular body 32. An opening 40 serves for disengagement of the ^{deformation} tongue 35 at the abutment 39.

- 15 In the case of a ~~caterpillar~~ or crawler track 50 as shown in Figure 8, tubular bodies 51 with guide teeth 52 are hingedly connected together by ^{means} way of rubber-mounted pins 53 ^{which are} arranged in the tubular bodies 51, and connectors 54 which are fixed on the pins 53.

- Each tubular body 51 has guide grooves 55 and abutments 56, 57 for fixing a travelling pad 63. The abutment at the insertion side is denoted by reference numeral 56 and the abutment at the rear side is 20 denoted by reference numeral 57.

As shown in Figure 9, an intermediate plate 64 with guide bars 65 for the guide grooves 55 and a base plate 74 with a ^{deformation or shaped portion} tongue 75 are joined to the travelling pad 63 ^{through vulcanizing} by vulcanisation. The ^{deformation or shaped portion} tongue 75 has rubber disposed therebeneath in the ^{latching} retaining region 10.

- 25 As shown in Figure 8, the tongue 75 of the base plate 74 has a double ^{corrugated} corrugation shape. That is afforded by the three shaped zones 76 and 77 ^{as} shown in Figure 10.

- 30 In addition the base plate 74 has an end abutment 78 ^{which} That corresponds ^{with} to a rear wall 79 with the abutment 57 of the tubular body 51.

The abutment 56 of the tubular body 51 is provided with a central recess 80 which corresponds to an oppositely disposed recess 81 ⁱⁿ of the travelling pad 63.

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